HUSSMANN®

GSVM

Medium Temperature
Remote and Self Contained
Open Vertical Merchandisers

Installation & Service Manual

IMPORTANT
Keep in store for future reference!

P/N 0515275_B
December 2010

ATTENTION

Merchandiser must operate for 24 hours before loading product!

Regularly check merchandiser temperatures.

Do not break the cold chain. Keep products in cooler before loading into merchandiser.

These merchandisers are designed for pre-chilled products only.

IMPORTANT
KEEP IN STORE FOR FUTURE REFERENCE
Quality that sets industry standards!

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REVISION B — *DECEMBER*

1. Added option condensate pan for GSVM 4072 and 5272; Page, 2-2

2. Replaced Bulb illustration; Page 5-2

3. Updated wiring diagram; Page A-11

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ANSI Z535.5 DEFINITIONS

• **DANGER –** Indicate[s] a hazardous situation which, if not avoided, will result in death or serious injury.

• **WARNING –** Indicate[s] a hazardous situation which, if not avoided, could result in death or serious injury.

• **CAUTION –** Indicate[s] a hazardous situation which, if not avoided, could result in minor or moderate injury.

• **NOTICE –** *Not related to personal injury –* Indicates[s] situations, which if not avoided, could result in damage to equipment.

INSTALLATION

CERTIFICATION

These merchandisers are manufactured to meet ANSI / National Sanitation Foundation (NSF®) Standard #7 requirements. Proper installation is required to maintain certification. Near the serial plate, each case carries a label identifying the type of application for which the case was certified.

ANSI/NSF-7 Type I - Display Refrigerator / Freezer
Intended for 75°F / 55% RH Ambient Application

ANSI/NSF-7 Type II - Display Refrigerator / Freezer
Intended for 80°F / 55% RH Ambient Application

ANSI/NSF-7 - Display Refrigerator
Intended for Bulk Produce

HUSSMANN PRODUCT CONTROL

The serial number and shipping date of all equipment is recorded in Hussmann's files for warranty and replacement part purposes. All correspondence pertaining to warranty or parts ordering must include the serial number of each piece of equipment involved. This is to ensure the customer is provided with the correct parts.

SHIPPING DAMAGE

All equipment should be thoroughly examined for shipping damage before and during unloading. This equipment has been carefully inspected at our factory. Any claim for loss or damage must be made to the carrier. The carrier will provide any necessary inspection reports and/or claim forms.

Apparent Loss or Damage

If there is an obvious loss or damage, it must be noted on the freight bill or express receipt and signed by the carrier's agent; otherwise, carrier may refuse claim.

Concealed Loss or Damage

When loss or damage is not apparent until after equipment is uncrated, retain all packing materials and submit a written response to the carrier for inspection within 15 days.

LOCATION

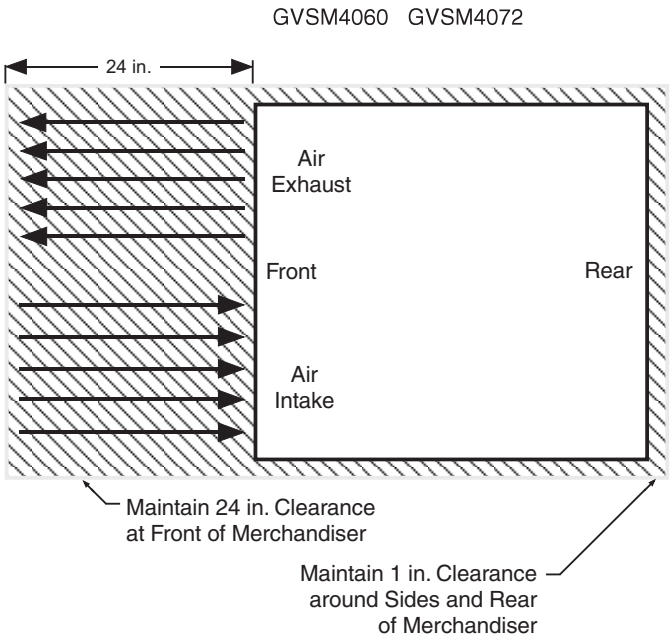
These merchandisers are designed for displaying products in air conditioned stores where temperature is maintained at or below the ANSI / NSF-7 specified level and relative humidity is maintained at or below 55%.

Recommended operating ambient temperature is between 65°F (18°C) to 75°F (23.9°C). Maximum relative humidity is 55%.

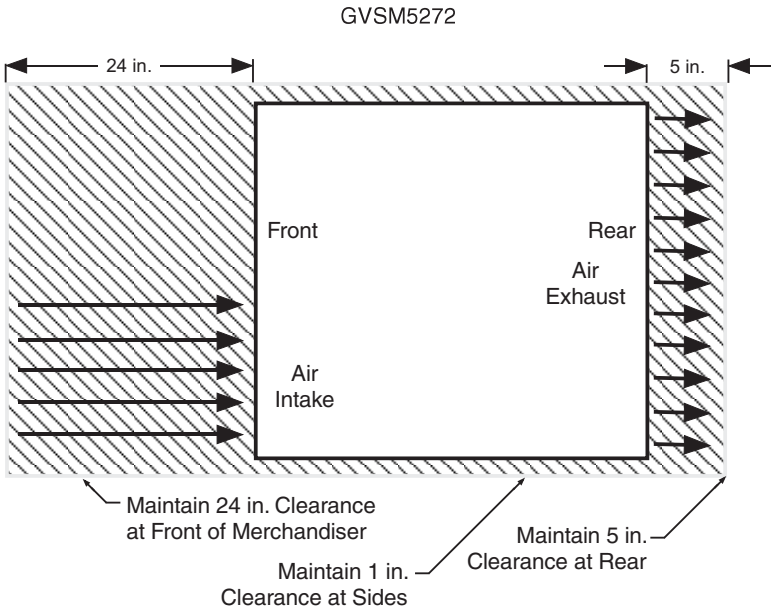
Placing refrigerated merchandisers in direct sunlight, near hot tables or near other heat sources could impair their efficiency. Like other merchandisers, these merchandisers are sensitive to air disturbances. Air currents passing around merchandisers will seriously impair their operation. Do NOT allow air conditioning, electric fans, open doors or windows, etc. to create air currents around the merchandiser.

SELF CONTAINED (LOCATION)

GSVM4060 and **GSVM4072** each have front condenser air intake and discharge. Maintain a minimum clearance distance of two feet in front of the merchandiser so that air discharge and air intake is not obstructed.



GSVM-5272 requires a 5 inch minimum clearance behind the merchandiser and clearance above the merchandiser since its air flows straight through the condensing unit compartment. Brackets are provided for field attachment to obtain this rear 5 inch minimum clearance.



MODEL DESCRIPTION

The GSVM open vertical merchandiser offers versatility in the display of medium temperature (32º F to 41º F) products such as dairy products, prepared salads, pizza and fresh entrees that are pre-chilled in a cooler. Carefully read and follow the instructions prior operating the merchandiser.

UNLOADING

Unloading from Trailer:
Lever Bar (also known as a Mule, Johnson Bar, J-bar, Lever Dolly, or Pry Lever)

Move the merchandiser as close as possible to its permanent location and remove all packaging. Check for damage before discarding packaging. Remove all separately packed accessories such as kits and shelves.

⚠ CAUTION

Do not walk or put heavy objects on case.

Improper handling may cause damage to the merchandiser when unloading. To avoid damage:

1. Do not drag the merchandiser out of the trailer. Use a Johnson bar (mule).
2. Use a forklift or dolly to remove the merchandiser from the trailer.

EXTERIOR LOADING

Do NOT walk on top of merchandisers or damage to the merchandisers and serious personal injury could occur.

MERCHANDISERS ARE NOT STRUCTURALLY DESIGNED TO SUPPORT EXTERNAL LOADING such as the weight of a person. Do not place heavy objects on the merchandiser.

SHIPPING SKID

Each merchandiser is shipped on a skid to protect the merchandiser's base, and to make positioning the case easier.

Do not remove the shipping skid until the merchandiser is near its final location. The skid provides protection for both the merchandiser and the floor.

Remove the skid by raising one end of the merchandiser approximately 6 inches. Block the merchandiser securely, and remove the two skid bolts from the raised end. Replace the bolts with (provided) leg levelers. Repeat this procedure at opposing end. Once the leg levelers are secured in place, the merchandiser may be slid off the skid and placed in its final location.

DO NOT TILT MERCHANDISER ON ITS SIDE OR END WHEN REMOVING SKID.

Once the skid is removed, the merchandiser must be lifted —NOT PUSHED— to reposition.

Check floor where merchandisers are to be set to see if it is a level area. Determine the highest part of the floor.

⚠ WARNING

Do NOT remove shipping crate until the merchandiser is positioned for installation.

MERCHANDISER LEVELING

BE SURE TO POSITION MERCHANDISERS PROPERLY. Level the merchandiser by all four corners. Merchandiser(s) must be installed level to ensure proper operation of the refrigeration system, and to ensure proper drainage of defrost water.

OPTIONAL LEGS

NSF® approved legs replace the leg levelers if required by local health codes. The legs raise the case 6 inches for cleaning purposes. An optional skirt kit can be provided to snap on the legs.

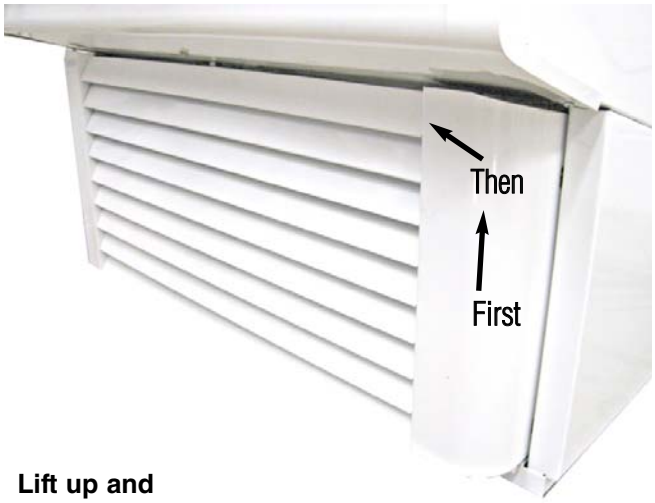
SERIAL PLATE LOCATION

The serial plate is located on the interior top, left side of the merchandiser. It contains all pertinent information such as model, serial number, amperage rating, refrigerant type and charge. This information will be needed to install, service or order parts for the merchandiser.

REFRIGERATION UNIT ACCESS

The lower front panel may be removed by removing screw at bottom and lifting the panel straight upward and over the tabs on which it is hanging. The panel is installed by reversing the above procedure.

Ensure lower front panel is flat against the floor when installed to prevent air circulation problems for self contained merchandisers.



Lift up and out to remove access panel

SEALING MERCHANDISER TO FLOOR

If required by local sanitary codes, or if the customer desires, merchandisers may be sealed to the floor using a vinyl cove base trim. The size needed will depend on how much variation there is in the floor, from one end of the merchandiser to the other. Sealing of the lower front and rear panels on self contained models may hamper their removal for servicing or maintenance of the condensing unit.

NOTE: Do not allow trim to cover any intake or discharge grilles located in the lower front panel.

ELECTRICAL / REFRIGERATION

MERCHANDISER ELECTRICAL DATA

Refer to Appendix A of this manual or the merchandiser's serial plate for electrical information.

FIELD WIRING

Field wiring must be sized for component amperes stamped on the serial plate. Actual ampere draw may be less than specified.

ALWAYS CHECK THE SERIAL PLATE FOR COMPONENT AMPERES

ELECTRICAL CONNECTIONS

All wiring must be in compliance with NEC and local codes. All electrical connections ***(for remote models, GSVM-4072 and 5072 self-contained)*** are to be made in the electrical *Handy Box* located behind the removable base panel at the left end of the merchandiser when facing the discharge air honeycomb.

POWER SWITCH

The main electrical power switch is located behind the front louvered access panel. The power switch must be turned OFF before servicing the merchandiser.

⚠ WARNING

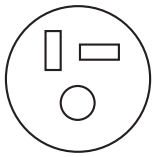
— LOCK OUT / TAG OUT —

To avoid serious injury or death from electrical shock, always disconnect the electrical power at the main disconnect when servicing or replacing any electrical component. This includes, but is not limited to, such items as doors, lights, fans, heaters, and thermostats.

ELECTRICAL OUTLET:

Before the merchandiser is connected to any wall circuit, use a voltmeter to check that the outlet is at 100% of the rated voltage. The wall circuit must be dedicated for the merchandiser. Failure to do so voids the warranty. Do not use an extension cord. Never plug in more than one merchandiser per electrical circuit.

- Always use a dedicated circuit with the amperage stated on the unit.
- Plug into an outlet designed for the plug.
- Do not overload the circuit
- Do not use long or thin extension cords. Never use adapters.
- If in doubt, call an electrician.



NEMA 5-20P
Receptacle
GVSM-4060

GSVM-4060 has a factory-installed power cord that is attached at the electrical box.

⚠ CAUTION

Risk of Electric Shock. If cord or plug becomes damaged, replace only with a cord and plug of the same type.

⚠ WARNING

Merchandiser must be grounded. Do not remove the power supply cord ground.

REFRIGERATION (Self Contained Models)

Each self contained model is equipped with its own condensing unit and control panel located beneath the display area. The correct type of refrigerant will be stamped on each merchandiser's serial plate. The merchandiser refrigeration piping is leak tested. The unit is charged with refrigerant, and shipped from the factory with all service valves open.

GSVM models have a refrigeration system that uses a hermetic compressor. GSVM-4060 and GSVM-4072 systems use a capillary tube for refrigerant control. The capillary tube is soldered to the suction line pull-out coil for proper heat exchange. **If the capillary should become plugged or damaged, it is best to replace the heat exchanger.**

GSVM-5272 employs a bleed port type expansion valve for proper refrigerant control. Read the merchandiser's serial plate for the appropriate refrigerant type and weight.

REFRIGERATION (Remote Models)

Refrigeration temperature is controlled by a factory-installed thermostat. The thermostat controls a liquid line solenoid valve (not provided with the merchandiser). The thermostat energizes the valve as the temperature rises. A pump down system is recommended for outdoor condensing units.

⚠ WARNING

Refrigeration lines are under pressure. Refrigerant must be recovered before attempting any connection or repair.

LINE SIZING (Remote Models)

Refrigerant line connections are made at the right end of merchandiser (facing front) beneath the refrigerated display area. The refrigerant line connection size is 3/8 in. The suction line is 5/8 in. Refrigerant lines should be sized as shown on the refrigeration legend that is furnished for the store or according to ASHRAE guidelines.

WATER OUTLET AND WATER SEAL

GSVM models 4072 and 5272 require a floor drain. The condensate water outlet is located in the center of the merchandiser. The outlet has a factory installed, external water seal.

For self contained models like GSVM-4060, this water seal drains into a high-humidity electric condensate pan located beneath the merchandiser. The pan uses a thermistor that senses water in the pan, adjusting the amount of heat required to evaporate the water. **Ensure the drain hose is properly trapped, and the drain area is not clogged.**

NOTE: An optional high-humidity electric condensate pan is available for GSVM models 4072 and 5272. If this option is ordered, a dedicated 120V circuit must be used with this option.

For remote models, the heated condensate pan is not provided. Connect the drain hose to a floor drain. Ensure that the drain hose is properly trapped.

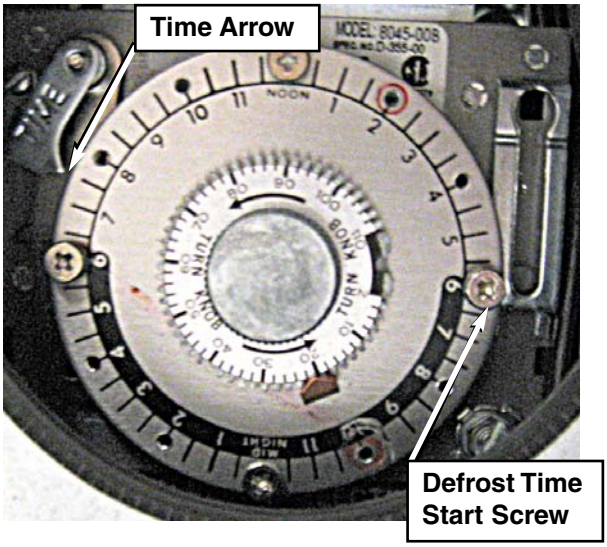
NOTE: All lower base panels must be in place when the refrigerator is operating. If not, airflow from the condenser will be directed over the evaporator pan and defrost water in the pan may overflow.

ELECTROMECHANICAL CONTROLS

These merchandisers require defrost cycles for proper operation. Refer to the data sheets for application data. Defrosts are time-initiated and time terminated. The defrost timer duration is factory set.

DEFROST TIME CLOCK

To access the defrost time clock remove the front access panel, and remove the electrical box cover



The clock has screws that initiate defrost according to the time of day. The failsafe setting sets the length of defrost from two minutes to 110 minutes.

When defrost starts, the evaporator fans continue to circulate air across the evaporator coil, melting any frost build-up.

⚠ CAUTION

When brazing pipes, be sure to use the insulation blanket shipped with the merchandiser to prevent damage to the metal merchandiser bottom.

To ensure a thorough defrost, it may be necessary to increase the failsafe time in high ambient conditions.

The time arrow must be set to the correct time of day. Turn the knob until the appropriate time on the wheel lines up with the time arrow.

SETTING DEFROST TIMES

Defrost times are factory set for three defrosts for GSVM-4060 and GSVM-4072. There are four factory-set defrost for GSVM-5272.

Additional defrosts may be required for merchandisers located in high humidity or high use areas. Avoid setting defrost during the day, or peak use periods.

If it is desired to change the factory-set defrost settings, move the defrost start time screw to correspond to the desired defrost time on the defrost wheel.

Set the length of time for the defrost (failsafe). Push down on the adjustment and slide it to the length of time. Do not set the time longer than 60 minutes.

⚠ WARNING

Product will be degraded and may spoil if allowed to sit in a non-refrigerated area.

TEMPERATURE CONTROL

Interior cabinet temperatures are controlled through the use of a bulb and capillary type temperature control. The control is located in the electrical box.

The sensing bulb is mounted on top of the evaporator coil on the GSVM-4060 and GSVM-4072. The sensing bulb is located on the rear wall behind the evaporator coil on the GSVM-5272. Be sure to disconnect electrical power prior to servicing the control.

The temperature control is factory set to between 19º F (-7º C) and 21º F (-6º C) for the GSVM-4060, GSVM-4072, and 26º F (-3ºC) to 28º F (-2º C) for the GSVM-5272 in order to maintain between 32º F (0º C) and 40º F (4º C) interior average temperatures.

The differential is set between 8º F (13º C) and 10º F (-12º C) or a little over halfway towards maximum. Do not adjust lower or evaporator icing will occur. It can be adjusted to other desired temperatures by turning the dial to the corresponding dial face temperatures. The indicated dial temperature will not directly correspond to the actual cabinet temperature due to the bulb location and depending on various conditions. A certain amount of time lag will be noticed between the new setting and the resulting temperature.

START UP / OPERATION

START UP

Follow the electromechanical controls start up procedures as detailed in Section 2 of this manual.

Each self contained merchandiser has its own evaporator coil. Model GSVM-5272 has an expansion valve (TEV). The TEV has been factory set at design conditions to provide the recommended performance. GSVM-4060 and GSVM-4072 have capillary tubes.

a. Check the interior cabinet thoroughly for loose nuts, bolts and electrical connections.
b. Inspect the refrigeration lines for visible damage or chafing.
c. Replace electrical box cover and access panel.
d. Turn on the electrical power, power switch and start the merchandiser. The merchan diser must pull down in temperature. **Allow merchandiser 24 hours to operate before loading product.**

TEV Adjustment (GSVM-5272 only)

Expansion valves may be adjusted to fully feed the evaporator. Before attempting to adjust valves, make sure the evaporator is clear or only lightly covered with frost, and the merchandiser is within 10°F of its expected operating temperature.

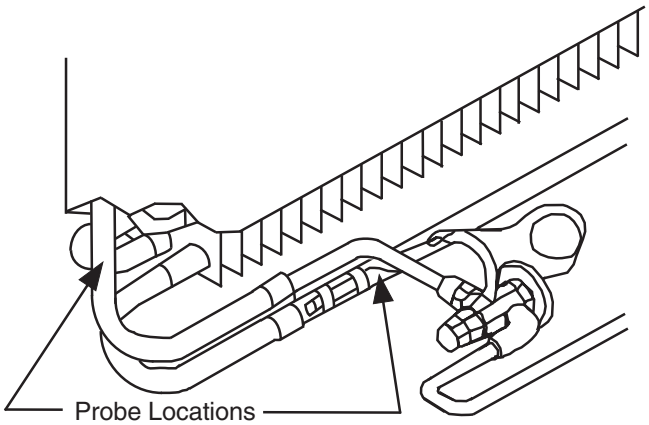
Adjust the valve as Follows:

a. Attach a probe to the suction line near the expansion valve bulb.

b. Obtain a pressure reading from the factory installed Schraeder valve. Convert the pressure reading to a saturated temperature for the refrigerant.

Temperature (b) minus Temperature (a) is the superheat. The valve should be adjusted so that the greatest difference between the two temperatures is 3° F (-16º C) to 5° F (-15º C).

Make adjustments of no more than 1/2 turn of the valve stem at a time and wait for at least 15 minutes before rechecking the probe temperature and making further adjustments.



CONTROLS and ADJUSTMENTS

Refrigeration Controls			Defrost Controls			
Model	Product Application	Discharge Air Temperature	Defrost Frequency (per day)	Type of Defrost	Temp. Termination	Failsafe Time (Minutes)
GVSM-4060 (Remote and Self Contained)	Medium Temp. (Dairy, Deli)	30°-35° F	3	Off Time	Time	20
GVSM-4072 (Remote and Self Contained)	Medium Temp. (Dairy, Deli)	30°-35° F	3	Off Time	Time	20
GVSM-5272 (Remote and Self Contained)	Medium Temp. (Dairy, Deli)	30°-35° F	4	Off Time	Time	30

1. The T-stat controller controls refrigeration temperature. This is factory installed in the control panel. Adjust this control knob to maintain the discharge air temperature shown. Measure discharge air temperatures at the center of the discharge honeycomb.

Defrosts are time initiated and time terminated for self contained and remote. The defrost setting is factory set as shown above.

LOAD LIMITS

Each merchandiser has a load limit decal. Shelf life of perishables will be short if load limit is violated.

AT NO TIME SHOULD MERCHANDISERS BE STOCKED BEYOND THE LOAD LIMITS INDICATED.

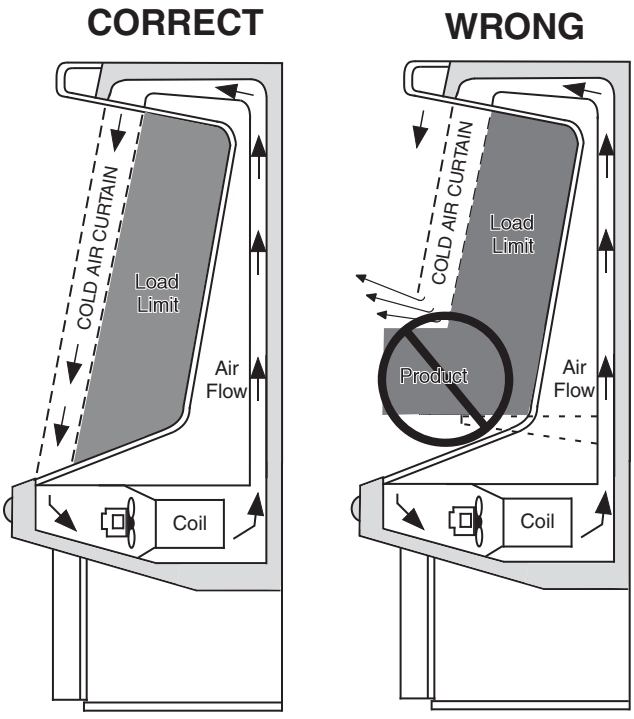
DO NOT BLOCK AIR LOUVERS.

LOAD LIMIT

STOCKING

Product should NOT be placed inside the merchandisers until merchandisers are at proper operating temperature.

Allow merchandiser 24 hours to operate before loading product.



Do not stock product past shelves

⚠ WARNING

Product will be degraded and may spoil if allowed to sit in a non-refrigerated area.

Proper rotation of product during stocking is necessary to prevent product loss. Always bring the oldest product to the front and set the newest to the back.

AIR DISCHARGE AND RETURN FLUES MUST REMAIN OPEN AND FREE OF OBSTRUCTION AT ALL TIMES to provide proper refrigeration and air curtain performance. Do not allow product, packages, signs, etc. to block these grilles. Do not use non-approved shelving, baskets, display racks, or any accessory that could hamper air curtain performance.

Do not allow product to be placed outside of the designated load limits in the illustration at left. Air flows through the back wall, over the product on the shelves, across the face of the product (air curtain), and into the return air grille.

SOLAR THERMOMETER

GSVM models have solar thermometers. The thermometer is located at the top, front center of the merchandiser's cabinet interior.

Temperature is displayed in Fahrenheit degrees as a standard option. Celsius is also an available option. The thermometer may be replaced if it becomes damaged.

To replace: remove the two screws securing the thermometer to its mounting bracket. Remove the sensing element from the clip, and install the new thermometer in reverse order.

SHELF MAXIMUM WEIGHT LIMITS

Hussmann merchandiser shelves are designed to support the maximum weight load limits as indicated in the table below.

Exceeding these maximum weight load limits may cause damage to the shelf or shelves, damage to the merchandiser, damage to store products, and potentially create a hazardous condition for customers and staff. Exceeding the indicated maximum weight load limits constitutes misuse as described in the Hussmann Limited Warranty.

GSVM-4060 has two standard shelves for product display. The 13 in. shelf should be positioned above the 15 in. shelf. Models GSVM-5272 and GSVM-4072 have an additional standard 13 in. shelf that is also to be positioned above the 15 in. shelf.

Maximum Shelf Weight Limits

	[1] Flat	17° Tilt	30° Tilt
Bottom Sheet Metal Area	250 lb (113.4 kg)	N/A	N/A
Standard 13 in. (330 mm) Shelf	250 lb (113.4 kg)	250 lb (113.4 kg)	75 lb (34 kg)
Standard 15 in. Shelf w/ optional 6° adapters	125 lb (56.7 kg)	N/A	N/A
Optional Wire Baskets	200 lb (90.7 kg)	100 lb (35.4 kg)	30 lb (13.6 kg)

[1] Shelf load limits at 0° tilt

MAINTENANCE

CARE AND CLEANING

Long life and satisfactory performance of any equipment is dependent upon the care it receives. To ensure long life, proper sanitation and minimum maintenance costs, these merchandisers should be thoroughly cleaned, all debris removed and the interiors washed down, weekly.

Exterior Surfaces
The exterior surfaces must be cleaned with a mild detergent and warm water to protect and maintain their attractive finish. **NEVER USE ABRASIVE CLEANSERS OR SCOURING PADS.**

Interior Surfaces
The interior surfaces may be cleaned with most domestic detergents, ammonia based cleaners and sanitizing solutions with no harm to the surface. Self contained models empty into a limited capacity evaporation pan, which will overflow if excess water is used in cleaning.

Do NOT Use:

•Abrasive cleansers and scouring pads, as these will mar the finish.

•Coarse paper towels on coated glass.

•Ammonia-based cleaners on acrylic parts.

•Solvent, oil or acidic based cleaners on any interior surfaces.

•Do not use high pressure water hoses.

⚠ WARNING

Product will be degraded and may spoil if allowed to sit in a non-refrigerated area.

Do:

•Disconnect electrical power before cleaning.

•Remove the product and all loose debris to avoid clogging the waste outlet.

•Store product in a refrigerated area such as a cooler. Remove only as much product as can be taken to the cooler in a timely manner.

•Thoroughly clean all surfaces with soap and hot water. **DO NOT USE STEAM OR HIGH WATER PRESSURE HOSES TO WASH THE INTERIOR.** THESE WILL DESTROY THE MERCHANDISERS' SEALING CAUSING LEAKS AND POOR PERFORMANCE.

•Lift hinged fan plenum for cleaning. Hook chain in rear panel to secure plenum during cleaning. BE SURE TO REPOSITION THE FAN PLENUM AFTER CLEANING MERCHANDISER.

•Take care to minimize direct contact between fan motors and cleaning or rinse water.

⚠ WARNING

Do NOT allow cleaning agent or cloth to contact food product.

•Do NOT flood merchandiser with water. **NEVER INTRODUCE WATER FASTER THAN THE WASTE OUTLET CAN REMOVE IT.**

SELF CONTAINED MODELS EMPTY INTO AN EVAPORATION PAN THAT WILL OVERFLOW IF TOO MUCH WATER IS INTRODUCED DURING CLEANING.

•Allow merchandisers to dry before resuming operation.

•After cleaning is completed, turn on power to the merchandiser.

⚠ WARNING

— LOCK OUT / TAG OUT —

To avoid serious injury or death from electrical shock, always disconnect the electrical power at the main disconnect when servicing or replacing any electrical component. This includes, but is not limited to, such items as doors, lights, fans, heaters, and thermostats.

CLEANING DISCHARGE HONEYCOMB

Discharge air honeycombs should be cleaned every six months. Dirty honeycombs will cause merchandisers to perform poorly. The honeycombs may be cleaned with a vacuum cleaner. Soap and water may be used if all water is removed from the honeycombs cells before replacing. Be careful not to damage the honeycombs.

1. Using a flat object such as a screw driver, compress the honeycomb and remove it from its retainer.

2. Clean and dry the air honeycombs.

3. After cleaning, replace in reverse order. Damaged honeycombs must be replaced.

⚠ CAUTION

DO NOT FLOOD!

Use only enough water necessary to clean surface. Water must not drip down the case!

Never use ammonia based cleansers, abrasive cleansers, or scouring pads.

CLEANING STAINLESS STEEL SURFACES

Use non-abrasive cleaning materials, and always polish with grain of the steel. Use warm water or add a mild detergent to the water and apply with a cloth. Always wipe rails dry after wetting.

Use alkaline chlorinated or non-chlorine containing cleaners such as window cleaners and mild detergents. Do not use cleaners containing salts as this may cause pitting and rusting of the stainless steel finish. Do not use bleach.

CLEANING SOLAR THERMOMETER

GSVM models have solar thermometers. The thermometer is located at the top, front center of the merchandiser's cabinet interior.

To clean the thermometer:

1. Remove the two screws securing the thermometer to its mounting bracket. Remove the sensing element from the clip

2. Use non-abrasive cleaning materials and a mild detergent to clean thermometer.

3. Be sure to wipe the element clean of any residues.

⚠ WARNING

Do NOT use HOT water on Cold glass Surfaces. This can cause the glass to shatter and could result in personal injury. Allow glass fronts, to warm before applying hot water.

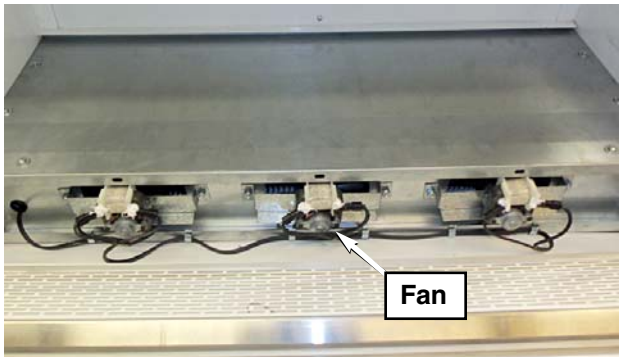
CLEANING UNDER DISPLAY PAN

Remove all product from the merchandiser and place in cooler. Always disconnect electrical power before cleaning.

1. Remove the display pan

2. Use non-abrasive cleaning materials and a mild detergent to clean display pan.

3. Wipe down the insides of the merchandiser with a mild detergent, and replace display pan. Allow merchandiser to pull down in temperature before loading product.



Merchandiser with display pan removed

CLEANING EVAPORATION PAN

(GSVM-4060 STANDARD)
(GSVM-4072/5272-OPTIONAL)

The condensate water outlet for self contained models empties into a limited capacity evaporation pan.

Debris or dirt accumulation inside the condensate evaporation pan or on the heater coil will reduce the pan's evaporation capacity and cause premature heater failure. The evaporation pan waste water will overflow and spill onto the floor if the heater is not properly operating.

Remove accumulated debris from the evaporation pan. Wipe down heater coil with a cloth and warm water. Be sure to remove any dirt, debris or liquids from the heater coil.

Water introduced during cleaning will cause the evaporation pan to overflow.

⚠ CAUTION

Evaporation Pan is Hot!

and poses risk of bodily injury – Always Wear gloves and protective eye wear when servicing. Turn off evaporation pan heater, and allow pan to cool.

CLEANING COILS

Condenser coils should be cleaned at least once per month. Additional cleaning may be needed depending on the operational environment. A dirty condenser blocks normal airflow through the coils.

Airflow blockage increases energy consumption and reduces the merchandiser's ability to maintain operating temperature.

To clean the coils, use a vacuum cleaner with a wand attachment and a soft (non-metallic) brush to remove dirt and debris. Do not bend coil fins. Always wear gloves and protective eye wear when cleaning near sharp coil fins and dust particles.

⚠ WARNING

SHUT FANS OFF DURING CLEANING PROCESS.

REMOVING SCRATCHES FROM BUMPER

Most scratches and dings can be removed using the following procedure.

1. Use steel wool to smooth out the surface area of the bumper.
2. Clean area.
3. Apply vinyl or car wax and polish surface for a smooth glossy finish.

PRECAUTION

CLEANING PRECAUTIONS

When Cleaning:

- Do not use high pressure water hoses
- Do not introduce water faster than waste outlet can drain
- NEVER INTRODUCE WATER ON SELF CONTAINED UNIT WITH AN EVAPORATION PAN
- NEVER USE A CLEANING OR SANITIZING SOLUTION THAT HAS OIL BASE (these will dissolve the butyl sealants) or an AMMONIA BASE (this will corrode the copper components of the merchandiser)
- TO PRESERVE THE ATTRACTIVE FINISH:
- Use a water and a mild detergent for the exterior only
- Do NOT use a chlorinated cleaner on any surface
- Do NOT use abrasives or steel wool scouring pads (these will mar the finish)

SERVICE

REPLACING FAN MOTORS AND BLADES

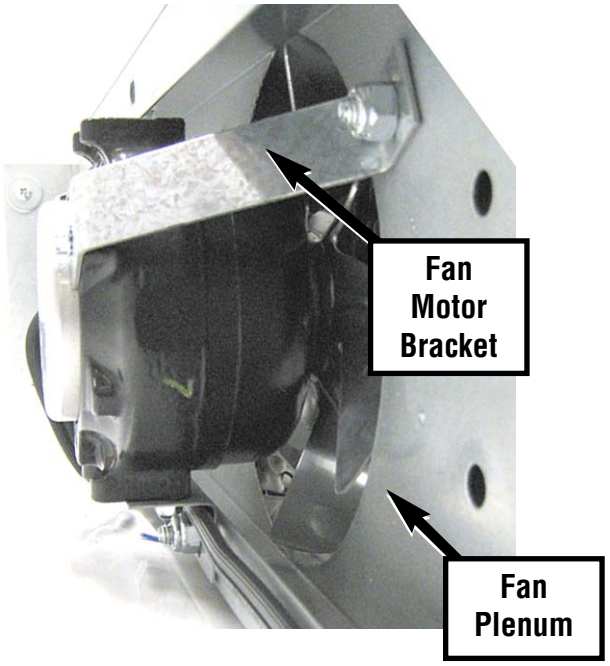
Should it ever be necessary to service or replace the fan motors or blades be certain that the fan blades are reinstalled correctly. **THE BLADES MUST BE INSTALLED WITH RAISED EMBOSSING (PART NUMBER ON PLASTIC BLADES) POSITIONED AS INDICATED ON THE PARTS LIST.**

⚠ WARNING

— LOCK OUT / TAG OUT —
To avoid serious injury or death from electrical shock, always disconnect the electrical power at the main disconnect when servicing or replacing any electrical component. This includes, but is not limited to, such items as doors, lights, fans, heaters, and thermostats.

For access to these fans:

1. Remove product and place in a refrigerated area. Disconnect electrical power.
2. Remove bottom pan.
3. **Disconnect fan from wiring harness.**
4. If it is determined that fan motor needs to be replaced, remove fan motor brackets from the fan plenum as shown.
7. Replace fan motor and/or blades.
8. Install brackets to fan motor and motor bracket to the fan plenum.
9. Reconnect fan motor to wiring harness.
10. Turn on power.
11. Verify that motor is working and blade is turning in the correct direction.
12. Reinstall display pans. Bring merchandiser to operating temperature before restocking.



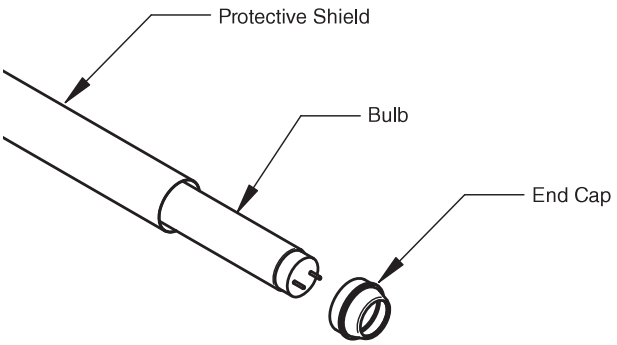
⚠ WARNING

Product will be degraded and may spoil if allowed to sit in a non-refrigerated area.

REPLACING FLUORESCENT LAMPS

Fluorescent lamps have a plastic shield. When the lamp is replaced, keep the lamp shield to install over the new lamp.

The switch under the display lamp cover operates both the display lamp and interior lamps.



Remove Plastic Pins Attaching Display Lamp.

⚠ WARNING

— LOCK OUT / TAG OUT —

To avoid serious injury or death from electrical shock, always disconnect the electrical power at the main disconnect when servicing or replacing any electrical component. This includes, but is not limited to, such items as doors, lights, fans, heaters, and thermostats.

TROUBLESHOOTING GUIDE

PROBLEM	PROBABLE CAUSE	SOLUTION
Compressor will not start. (no noise)	1. Power disconnected	1. Check service cord or wiring connection
	2. Blown fuse or breaker	2. Replace fuse or reset breaker
	3. Defective or broken wiring	3. Repair or replace
	4. Defective overload	4. Replace
	5. Defective temperature control	5. Replace
Compressor will not start; cuts out on overload.	1. Low voltage	1. Cabinet voltage must not be more than 5% below rating
	2. Defective compressor	2. Replace
	3. Defective relay	3. Replace
	4. Restriction (pinched cap tube)	4. Repair or replace
	5. Restriction (moisture)	5. Leak check, replace drier evacuate and recharge
	6. Condenser blocked with dust and dirt	6. Clean condenser
	7. Defective condenser fan motor	7. Replace
Warm storage temperature	1. Temperature control not set properly	1. Reset control
	2. Short or refrigerant	2. Leak check, replace drier evacuate and recharge
	3. Cabinet location too warm	3. Move to cooler location or correct excessive heat source
	4. Refrigerant over-charge	4. Purge system, evacuate and recharge
	5. Low voltage, compressor cycling on overload	5. Compressor voltage must not be more than 5% below rating
Compressor runs continuously; product too warm.	1. Short of refrigerant	1. Leak check, replace drier, evacuate and recharge
	2. Inefficient compressor	2. Replace
Compressor runs continuously; product too cold	1. Defective control	1. Replace
	2. Control sensing element not in positive contact	2. Assure proper contact
	3. Short on refrigerant	3. Leak check, replace drier evacuate and recharge

TROUBLESHOOTING LIGHT GUIDE

PROBLEM	SOLUTION
Lights won't start	1. Check light switch 2. Check continuity to ballast 3. Check to see if bulbs are inserted properly in sockets 4. Check voltage
Lights flicker	1. Allow lamps to warm up 2. Check lamp sleeve for cracks 3. Check sockets for moisture and proper contact 4. Bulb replacement may be necessary 5. Check voltage 6. New bulbs tend to flicker until used

GSVM ACCESSORIES

The following is a description of the various accessories available for the GSVM.

Caster Kit — Consists of 5 in. braking casters, which screw in to the standard threaded holes in the four corners under the cage occupied by the standard leg levelers. The kit will add 5 5/8 in. of height to the case.

Leg Kit — The legs also go into the same holes as the standard levelers, which will have to be removed. The legs are adjustable and will add 5 5/16 in. to the height of the case. The skirt kit requires the use of these legs.

Four-sided Skirt Kit — This is a four-sided skirt that encloses the open area under the merchandiser when the leg kit is used. The skirt kit clamps to the legs.

Night Cover — This is a clear, 5 mm thick, polyester shade cover that covers the face of the merchandiser. It will fasten to the top of the merchandiser and be drawn to a snap fastener in the area above the front bumper. The cover, although loose fitting on the ends, will conserve energy during periods when the store is not open. The cover is standard on the GSVM-5272.

Wrap-Around Bumper Kit — This bumper replaces the standard front bumper and wraps around both sides of the merchandiser at the standard height of 22 inches to the centerline of the 2 1/4 in. wide bumper.

Colored Accent Panel — This panel can be (a.) the top front panel over the product, (b.) the panel behind the bumper, or (c.) the access panel below the bumper panel, or any combination of these.

Shelf end Trim Kit — Consists of four painted steel ends for the standard 13 in. and 15 in. shelves. This trim conceals and protects the exposed ends of the shelves. The trim kit attaches by two snap fasteners supplied with each trim piece for the GSVM-4060 model.

High Humidity Condensate Pan — (For GSVM-4072 & 5272) This is a 1,000 watt, 9 Amp. pan with a 6 ft - 9 in. 115V power cord attached. A dedicated circuit is required.

Shelf Upslope Tilt Adapter Kit — This kit consists of four zinc coated wire adapters to increase the two standard shelves, upslope from 1 1/2º to 6º.

Price Tag Molding Kit — This kit consists of aluminum price tag molding for the standard shelves. Price tag moulding will hold both 1 in. and 1.235 in. standard price tags. (Note that the standard shelves accept 1.235 in. tags.)

Wire Product Stop Kit — This kit consists of a 2 in. high chrome plated open wire stops for the standard shelf. This stop is mounted under tension and should not be confused with the wire front in the partition kit.

Wire Partition Kit — This is a free-standing wire system, which attaches to the standard shelves, and consists of a wire front, (different from the product stop) two wire sides and two partitions from the front to back, all chrome plated and 3 inches high.

Wire Cross Divider — This is a 3 inches high and 4 inch-long divider that could be ordered to be used with the wire partition kit above.

Wire Basket Kits — One kit is available to replace the top 13 in. shelf or shelves, another is available to replace the bottom 15 in. shelf. Each kit consists of a wire basket, two brackets, and two dividers, which could also be used as ends. These parts are zinc plated. The baskets have an 8 in. high back and a 4 in sloped front.

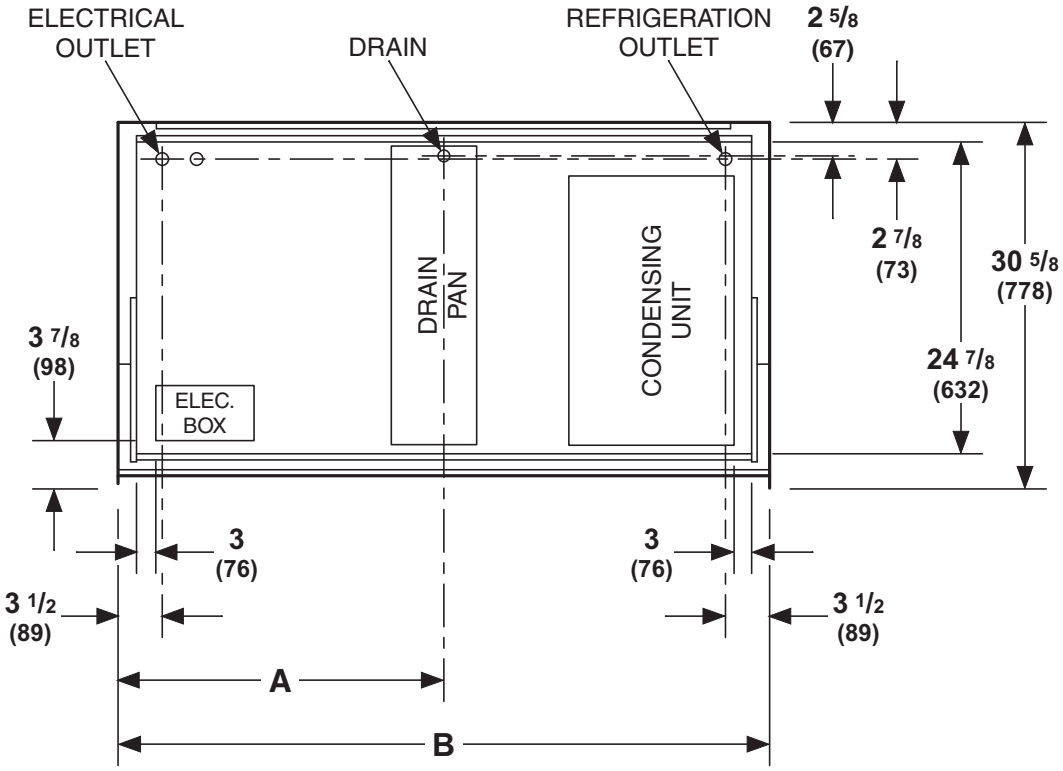
Wire Basket Dividers — These are additional dividers, which can be with the wire baskets kit to obtain additional partitioned areas in the baskets.

Additional Lighted Shelf — This consists of an additional 13 in. lighted shelf that can be positioned between the two standard shelves. It is the same construction as the top standard 13 in. shelf.

Item Part #	Description
FAN ASSEMBLIES AND THERMOSTATS	
GSVM-4060, GSVM-4072, GSVM-5272	
5W Standard Fan Assembly	
MO.4410333	Motor — 120V/60 Hz
FB.21S080	Fan Blade
CT.4480216	Refrigeration Thermostat
EP.19S63612	Cord, Power Supply (GSVM 4060 only)
HEATERS	
GSVM-4060 (ONLY)	
HE.19S678	Condensate Pan Heater 115V, 350W
HE.4969309	Condensate Pan
CONTROL PANEL	
SW.4440542	GSVM-4060 - Power Switch
SW.4440546	GSVM-4072 & 5272 Power Switch
SW.4481941	Time Clock, 120/60

Item Part #	Description
REFRIGERATION	
EQ.4671069	Condensing Unit Assembly (GSVM-4060 & 4072)
EQ.4671068	Condensing Unit Assembly (GSVM-5272)
TP.4612640	Cap Tube Assembly (GSVM-4060 & 4072)
VR.4613892	Crankcase Pressure Regulator
VR.4613899	Expansion Valve (GSVM-5272)
FI. 4611347	Drier (GSVM-4060 & 4072)
FI.4612641	Drier (GSVM-5272)
TM.4910245	Solar Thermometer
LAMPS AND BALLASTS	
EP.4481936	Ballast (GSVM-4060 & 4072)
EP.4481962	Starter, Lamp, 20W
BA.4480866	Ballast (GSVM-5272)
EP.4480867	Starter, Lamp, 40W
Fluorescent Lamp Replace with like fixtures.	

GSVM

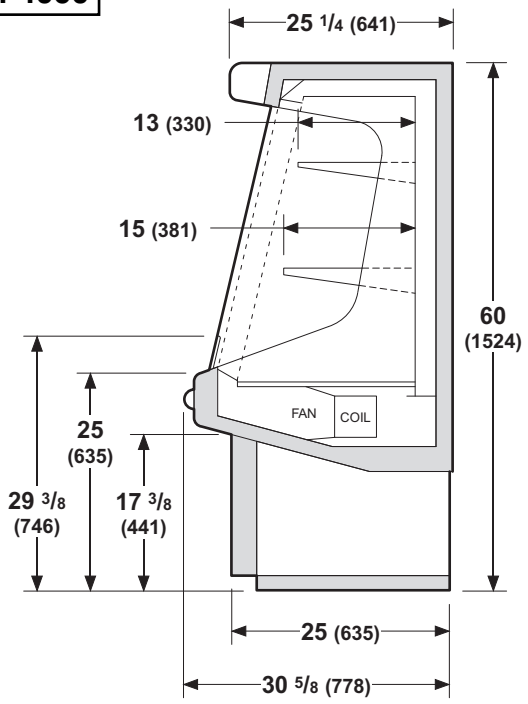


MODEL	"A"	"B"
GSVM 4072	16"	40"
GSVM 4060	24"	52"

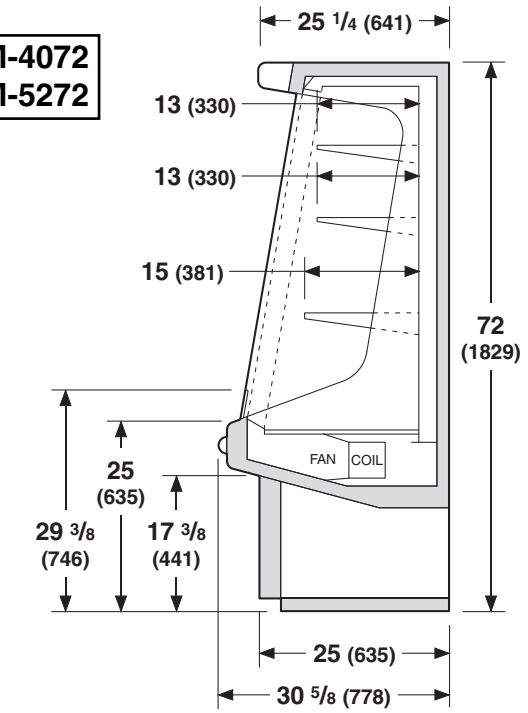
General	GSVM-4060	GSVM-5272
Case Length *(Note: Includes One Pair Ends)*	40 in. (1016)	52 in. (1321)
Optional End Bumpers *(One Pair)*	2 (51)	2 (51)
Waste Outlet		
LH end of case *(from outside of End Assembly)* to center of waste outlet	16 (406)	24 (610)

Dimensions shown as inches and (mm).

GSVM-4060



GSVM-4072
GSVM-5272



Note: This data is based on store temperature and humidity that does not exceed 75°F and 55% R.H. unless otherwise stated. Schedule defrost at night while lights are off.

REFRIGERATION DATA

	GSVM-4060 GSVM-4072 GSVM-5272
Thermostat Setting CI/CO (°F)	
GSVM-4060/4072	20 / 29
GSVM-5272	25 / 34
Condensing Unit (hp)	3/4 hp (All Models)
Condensing Unit Capacity	
GSVM-4060/4072	4410
GSVM-5272	4610
(Btu/hr at std. rating conditions)	

DEFROST DATA

Frequency (hr)	
GSVM-4060/4072	8
GSVM-5272	6
OFFTIME	
Failsafe (minutes)	
GSVM-4060/4072	20
GSVM-5272	30
Defrost Termination	Time Terminated

PHYSICAL DATA

Refrigerant Charge		
GSVM-4060 (R134a)	33 oz	0.936 kg
GSVM-4072 (R134a)	32 oz	0.907 kg
GSVM-5272 (R404a)	46.5 oz	1.318 kg

Electrical Data

Note: These are rated values for individual components and should not be added together to determine total merchandiser electrical load.

	GSVM-4060/4072		GSVM-5272	
Number of Fans – 4W (open shell)	**2**		**3**	
	Amperes	**Watts**	**Amperes**	**Watts**
Evaporator Fans				
115V 60Hz Standard	**0.8**	**8**	**1.2**	**12**
Condensate Pan Heaters (115V) GSVM-4060 (only)	**3**	**350**		

Condensing Unit (115V, 1Ph, 60Hz) Standard

GSVM-4060/4072	
Compressor LRA	66.3
Compressor RLA	11.8
GSVM-5272	
Compressor LRA	60.0
Compressor RLA	13.2

Product Data

GSVM-4060	
ARI Total Display Area [1] **(*Sq Ft/Case*)**	11.70 ft^2 /case (1.086 m^2 /case)
GSVM-4072	
ARI Total Display Area [1] **(*Sq Ft/Case*)**	16.65 ft^2 /case (1.546 m^2 /case)
GSVM-5272	
ARI Total Display Area [1] **(*Sq Ft/Case*)**	20.22 ft^2 /case (1.878 m^2 /case)

[1] Computed using AHRI 1200 standard methodology:
Total Display Area, ft^2 [m^2] / Unit of Length, ft [m]

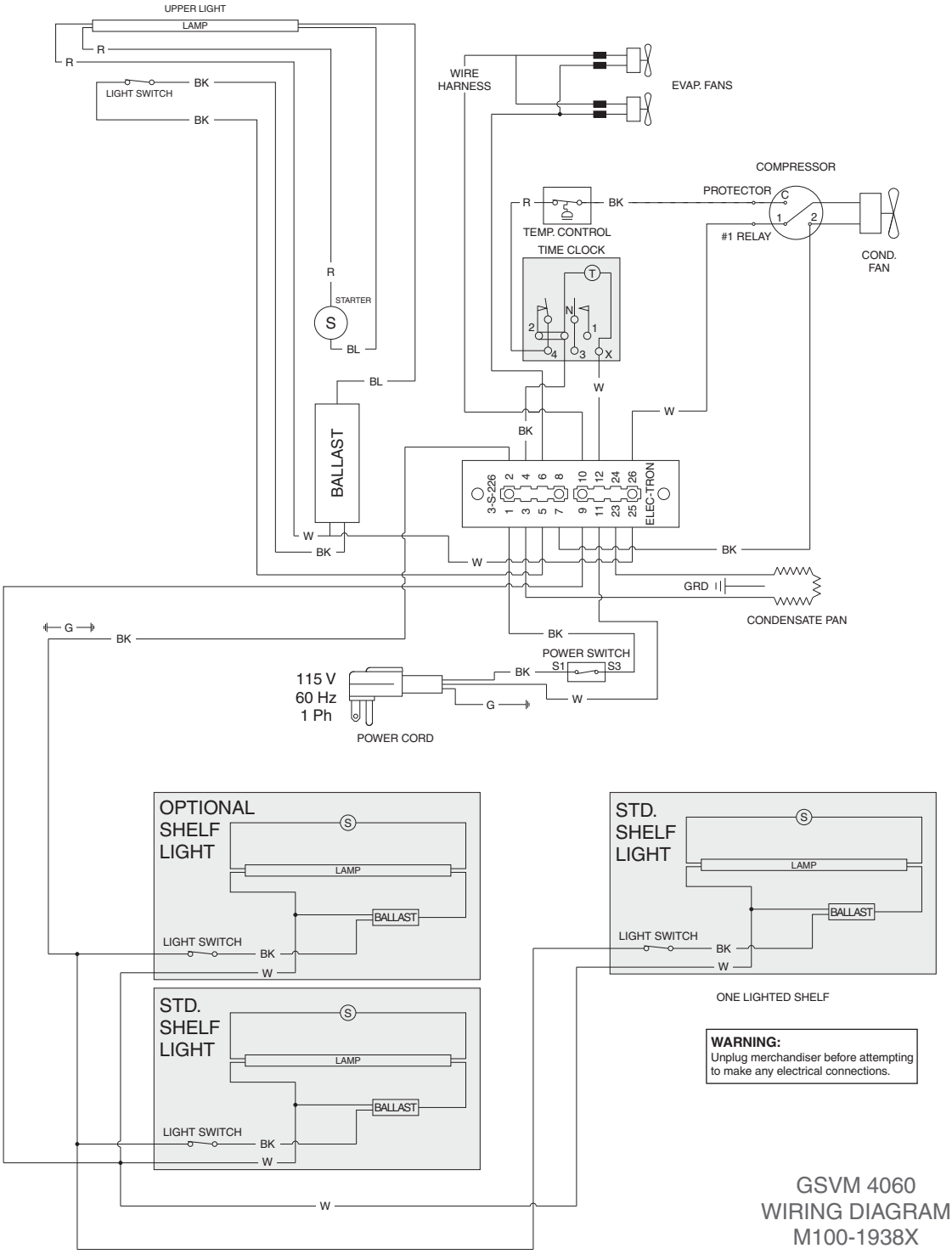
	Nominal HP	Refrigerant Type	Volts	Run Amps	Nema Plugs	Fuse Amps	Hz/Ph
GSVM-4060	3/4	R134a	115	16	5-20P	20	60/1
GSVM-4060R	—	R134a	115	5.0	Hard Wired*	15	60/1
GSVM-4072	3/4	R134a	115	17.0	Hard Wired*	25	60/1
GSVM-4072R	—	R134a	115	5.0	Hard Wired*	15	60/1
GSVM-5272	3/4	R404a	115	19.5	Hard Wired*	25	60/1
GSVM-5272R	—	R404a	115	5.0	Hard Wired*	15	60/1

* Requires field wiring.
R — Remote Cases

ESTIMATED SHIPPING WEIGHT [2]

Case	*self contained*	*remote*	*End*
GSVM-4060	**380 lb** (172kg)	**308 lb** (140kg)	Included
GSVM-4072	**425 lb** (193kg)	**353 lb** (160kg)	Included
GSVM-5272	**600lb** (272kg)	**520 lb** (236kg)	Included

[2] Actual weights will vary according to optional kits included.



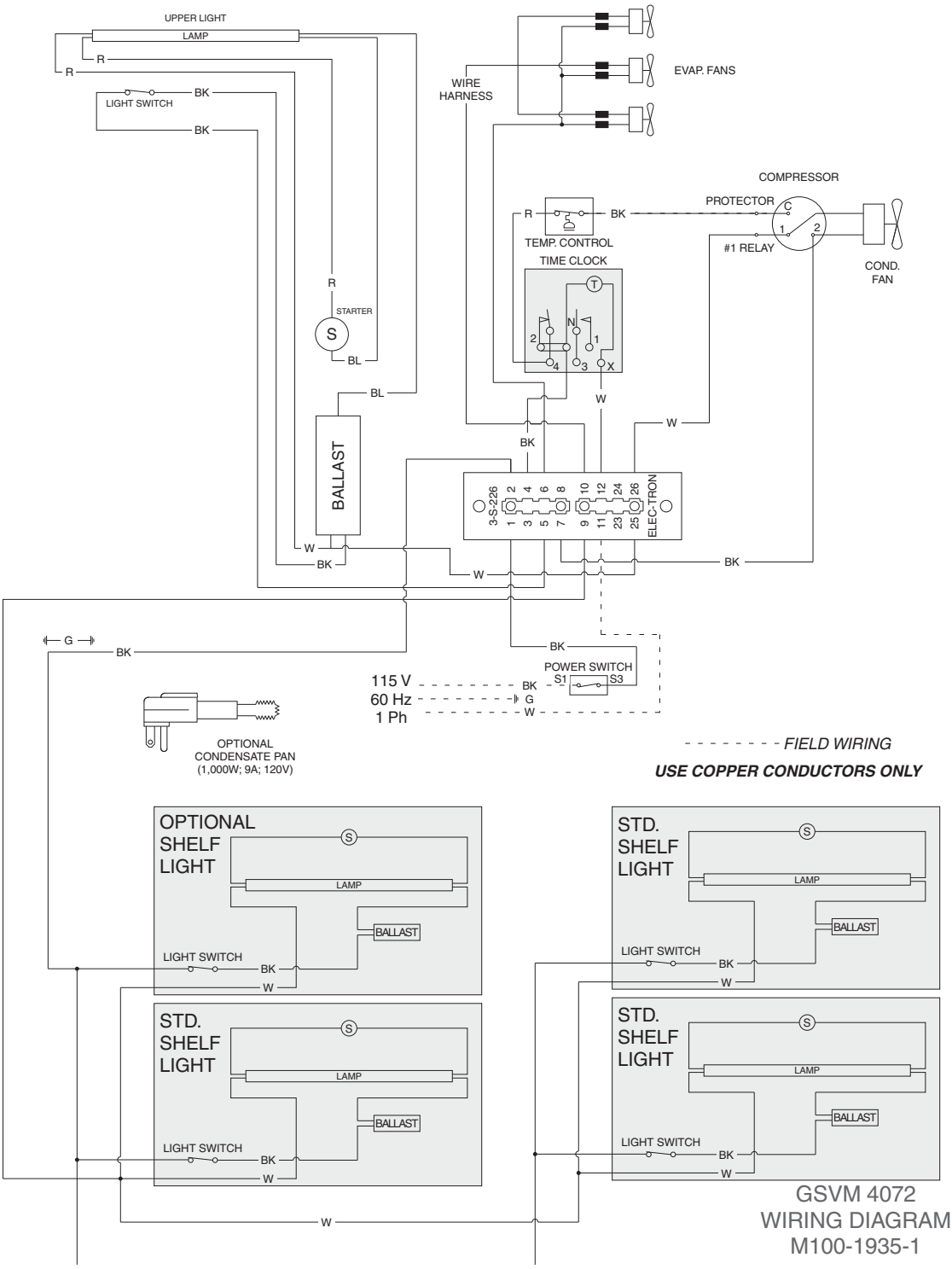
WARNING

All components must have mechanical ground, and the merchandiser must be grounded.

CIRCLED NUMBERS = PARTS LIST ITEM NUMBERS

R = Red Y = Yellow G = Green BL = Blue BK = Black W = White

● = **120V POWER** ○ = **120V NEUTRAL** ⏚ = **FIELD GROUND** ⫽⫽⫽ = **CASE GROUND**



GSVM 4072
WIRING DIAGRAM
M100-1935-1

WARNING

All components must have mechanical ground, and the merchandiser must be grounded.

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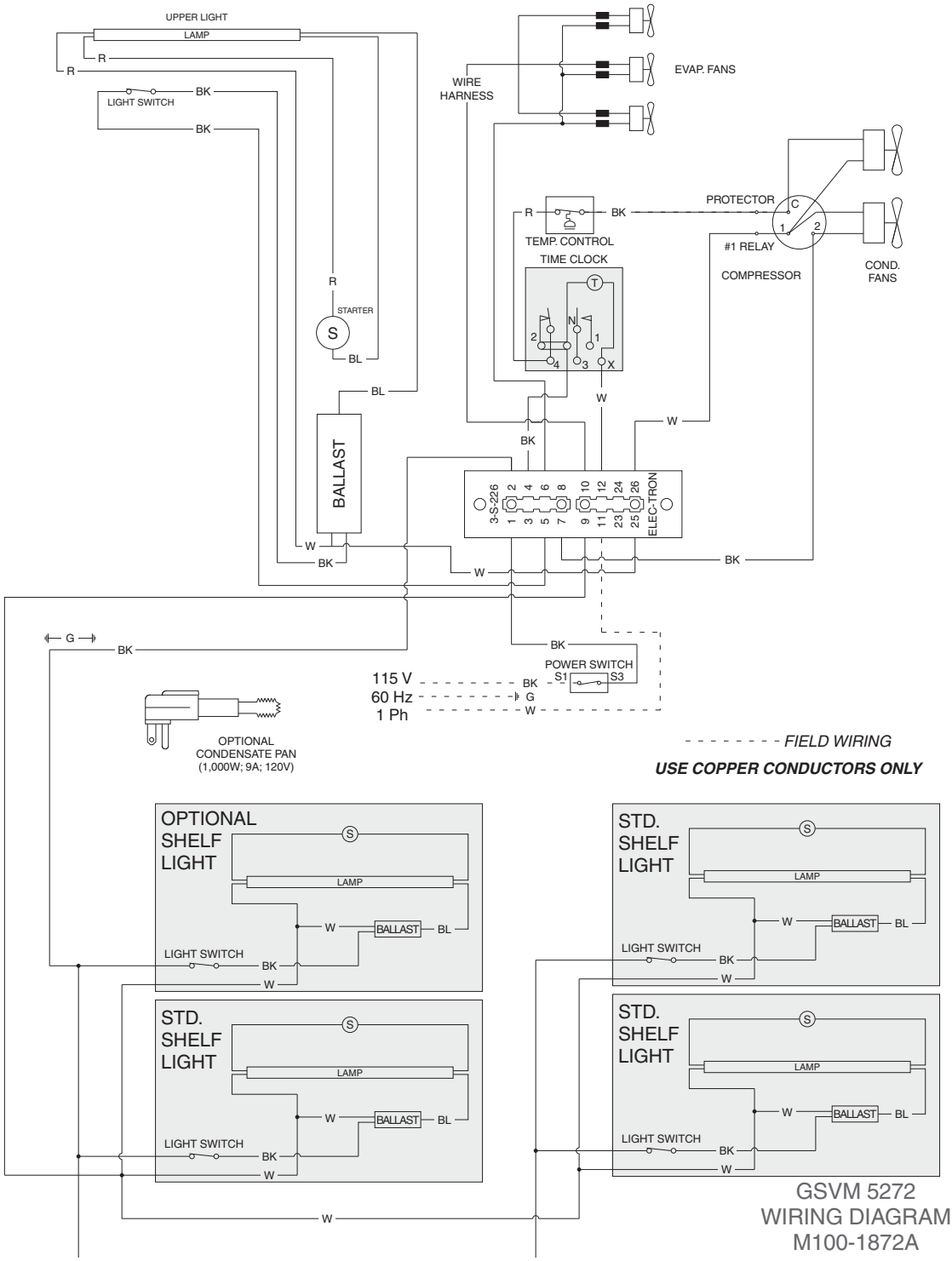

GSVM 5272
WIRING DIAGRAM
M100-1872A

WARNING

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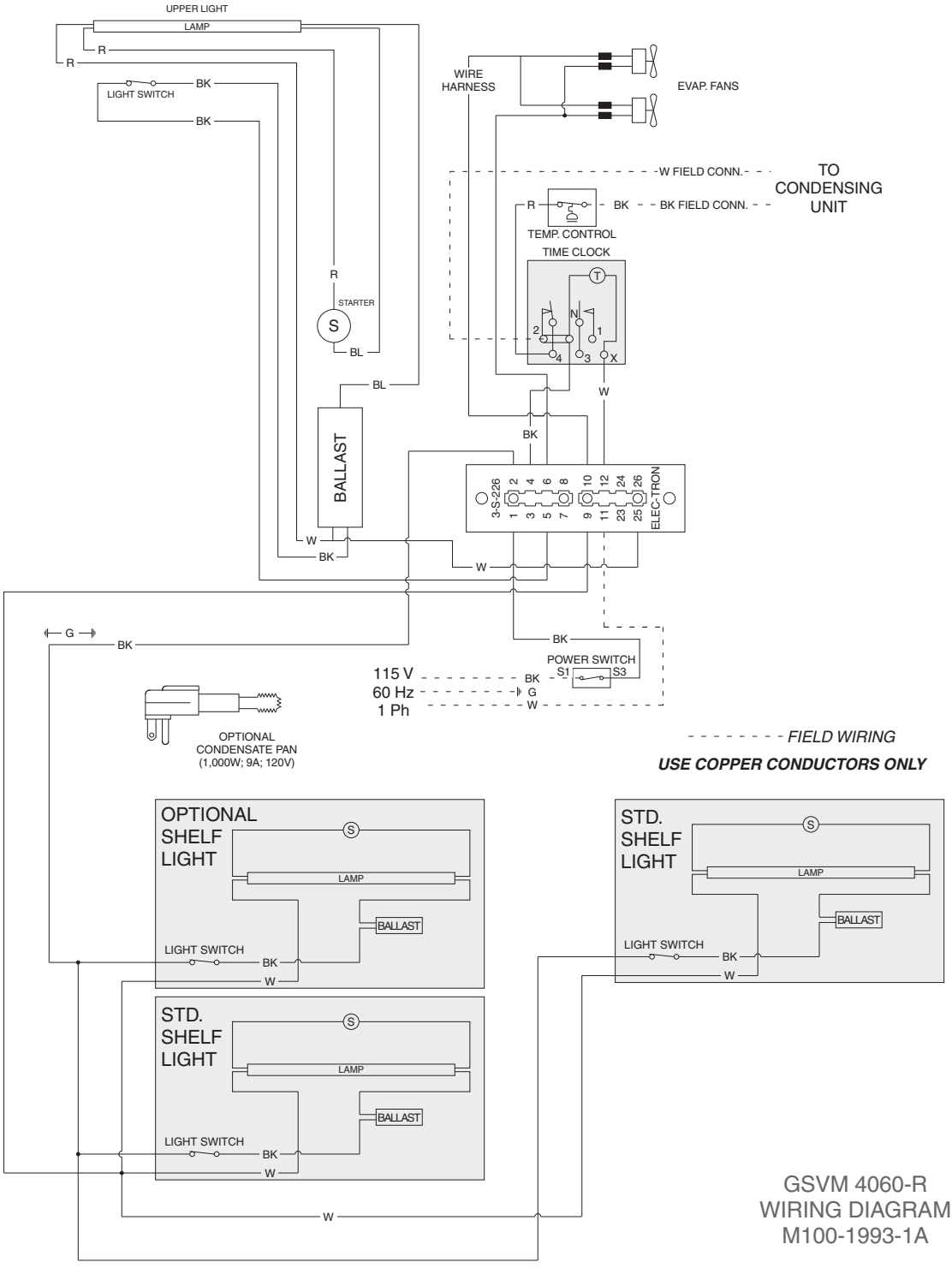

GSVM 4060-R
WIRING DIAGRAM
M100-1993-1A

WARNING

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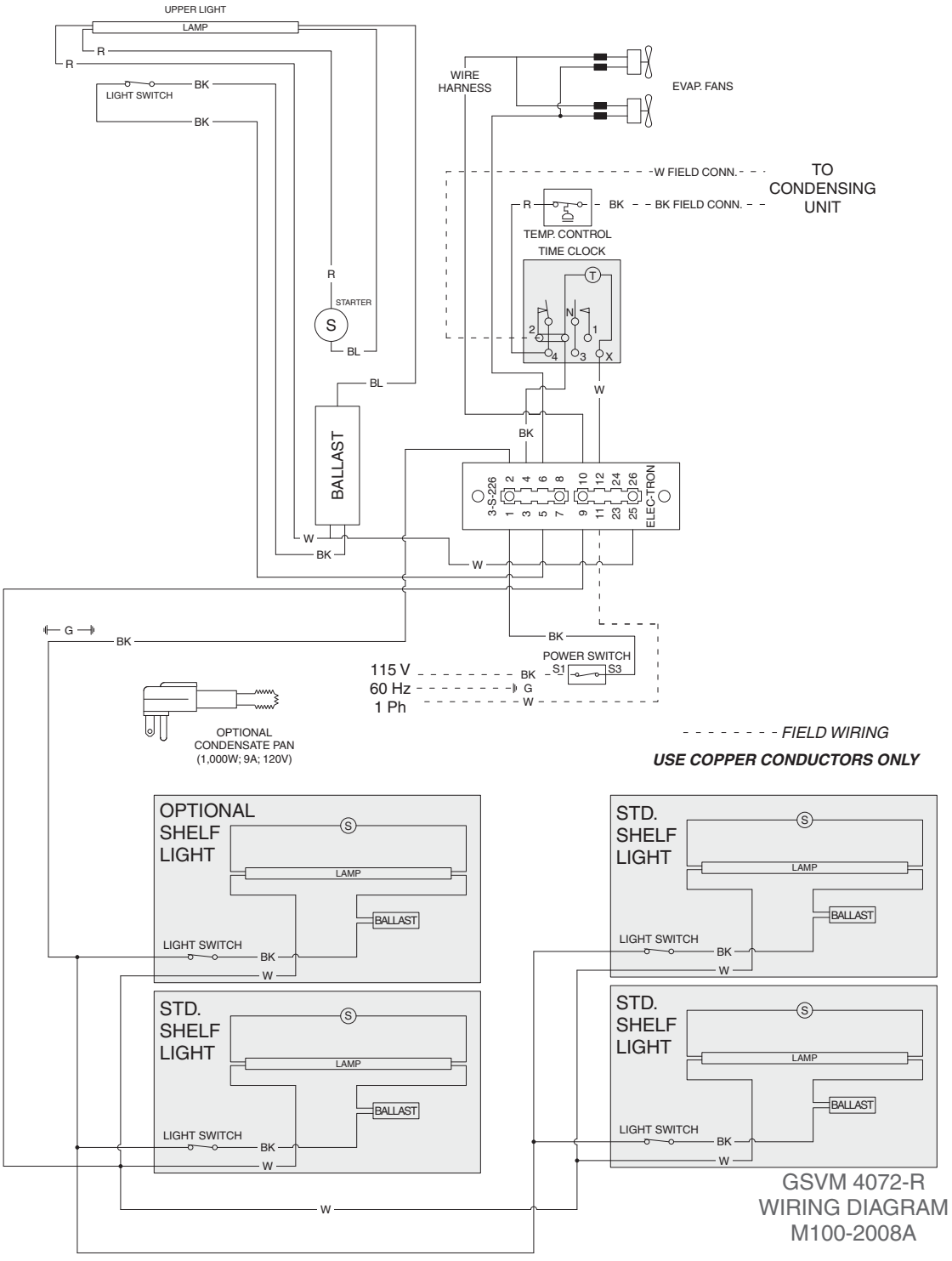

GSVM 4072-R
WIRING DIAGRAM
M100-2008A

WARNING

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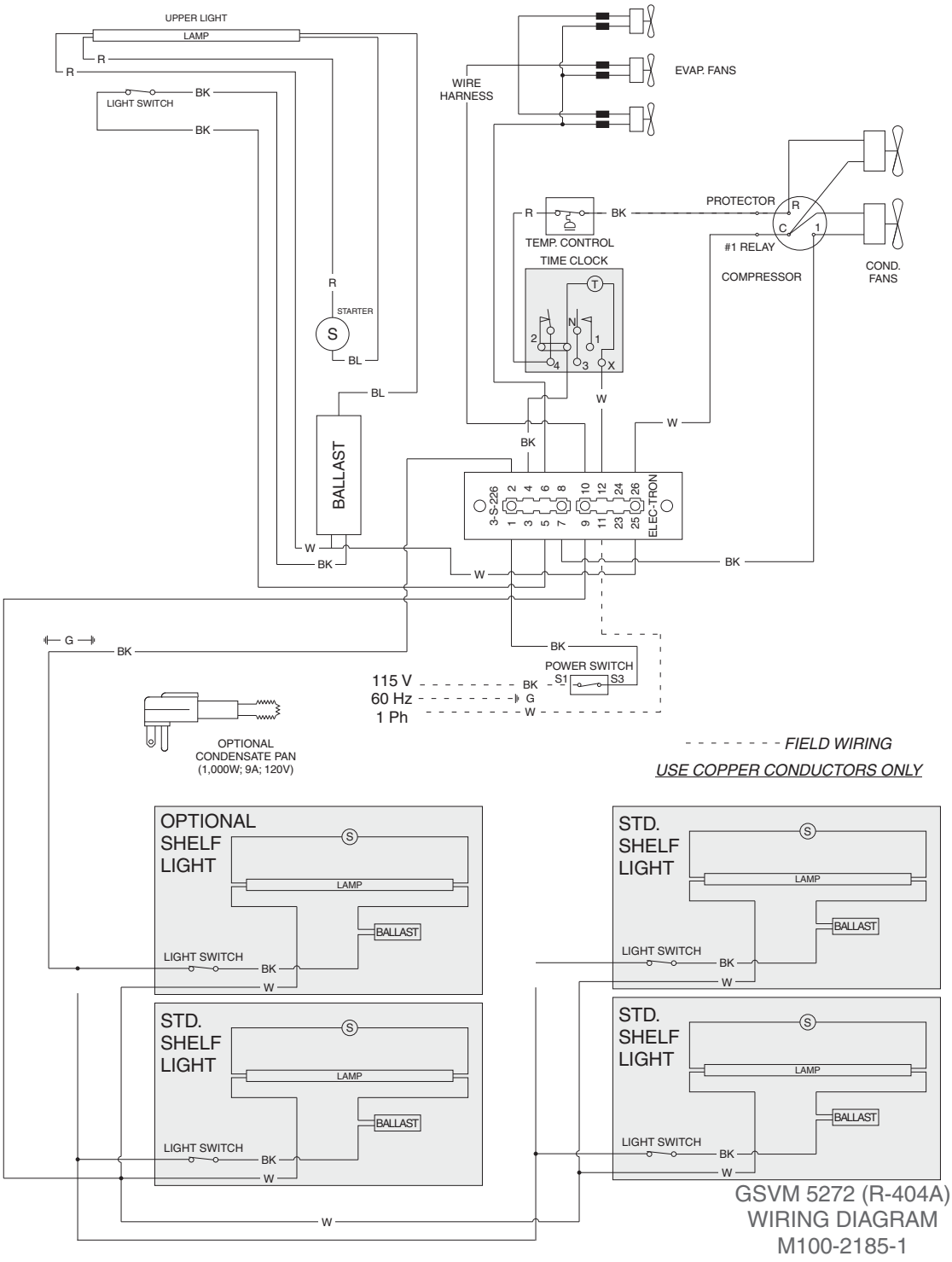

GSVM 5272 (R-404A)
WIRING DIAGRAM
M100-2185-1

WARNING

All components must have mechanical ground, and the merchandiser must be grounded.

CIRCLED NUMBERS = PARTS LIST ITEM NUMBERS

R = Red Y = Yellow G = Green BL = Blue BK = Black W = White

● = **120V POWER** ○ = **120V NEUTRAL** ⏚ = **FIELD GROUND** ⫽⫽⫽ = **CASE GROUND**

HUSSMANN®

To obtain warranty information
or other support, contact your
Hussmann representative.
Please include the model and
serial number of the product.

Hussmann Corporation, Corporate Headquarters: Bridgeton, Missouri, U.S.A. 63044-2483 01 July 2005

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